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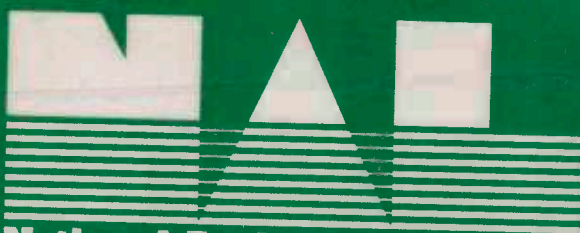
Floodplain Management Study Correction Creek Taylor County, Wisconsin



Prepared by:
United States Department of Agriculture
Soil Conservation Service
Madison, Wisconsin

In Cooperation with:
City of Medford, Wisconsin
Taylor County, Wisconsin
and the
Wisconsin Department of Natural Resources
1993

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Correction Creek Floodplain Management Study

Introduction

The purpose of this floodplain management study is to define the flood characteristics of Correction Creek from the southern corporate boundary of the City of Medford at County Hwy O (along the southern edge of Section 34, T31N R1E) to one half mile north of Allman Avenue at the center of Section 23, T31N R1E.

This study was requested by the City of Medford through the Wisconsin Department of Natural Resources (DNR). The city needs these study results in order to comply with Section 87.30 of the Wisconsin Statutes. This section states that counties, cities and villages must adopt reasonable and effective floodplain zoning ordinances in areas within their jurisdiction. The purpose of the zoning is to protect human life and health and to minimize potential flood damage.

This report was prepared for use by the City of Medford and Taylor County in planning the use and regulation of the Correction Creek floodplain. It was prepared by the U. S. Department of Agriculture (USDA), Soil Conservation Service, in cooperation with the City of Medford and Taylor County, Wisconsin and the Wisconsin Department of Natural Resources.

The 100- and 500-year frequency flood boundaries and the floodway boundaries have been delineated on contour maps furnished by the City of Medford (see pages 9 to 18). The 10-, 50-, 100- and 500-year frequency flood profiles have been plotted and are given in Appendix A. Discrepancies exist between the ground surveyed cross sections and the contour map elevations. Attempts were made to resolve the apparent errors in the contour maps, but they were never resolved (see Appendix E: Investigation and Analysis). It is suggested that any dispute or questionable flooded areas be resolved using the profile elevations and field survey.

The Soil Conservation Service carries out floodplain management studies in accordance with Federal Level Recommendation 3 of "A Unified National Program for Floodplain Management," and Section 6 of Public Law 83-566. The principles contained in Executive Order 11988, Floodplain Management, are addressed in this part.

In Wisconsin, the Soil Conservation Service coordinates floodplain management studies with the Wisconsin DNR, through a joint coordination agreement entered into in October, 1978. The Wisconsin Water Resources Act (Chapter 614, Laws of Wisconsin, 1965) authorizes the DNR, Division of Enforcement, to establish and upgrade minimum standards for floodplain regulations.

The downstream study limit was changed from that stated in the original plan of work due to insufficient hydrologic and hydraulic data for the Black River from its junction with the Little Black River to the City of Medford's southern corporate limit. In the plan of work, the downstream study limit was located at the junction of Correction Creek and the Little Black River. However, an analysis of the Black River was not included in the plan of work. This analysis would be necessary to evaluate the backwater effect from the Black River on Correction Creek in the area north of the Gravel Road to County Hwy O.

Study Area Description

Correction Creek is located in southeastern Taylor County in north-central Wisconsin. The study area consists of the floodplain adjacent to approximately 3.25 miles of Correction Creek (see the Vicinity Map on page 3).

The downstream study limit is the southern corporate boundary of the City of Medford at County Hwy O (along the southern edge of Section 34, T31N R1E). The upstream study limit is one half mile north of Allman Avenue, at the center of Section 23, T31N R1E.

The drainage area is as follows:

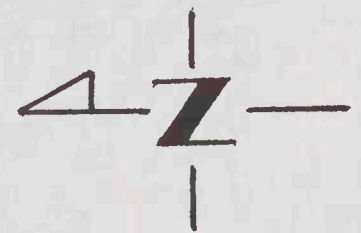
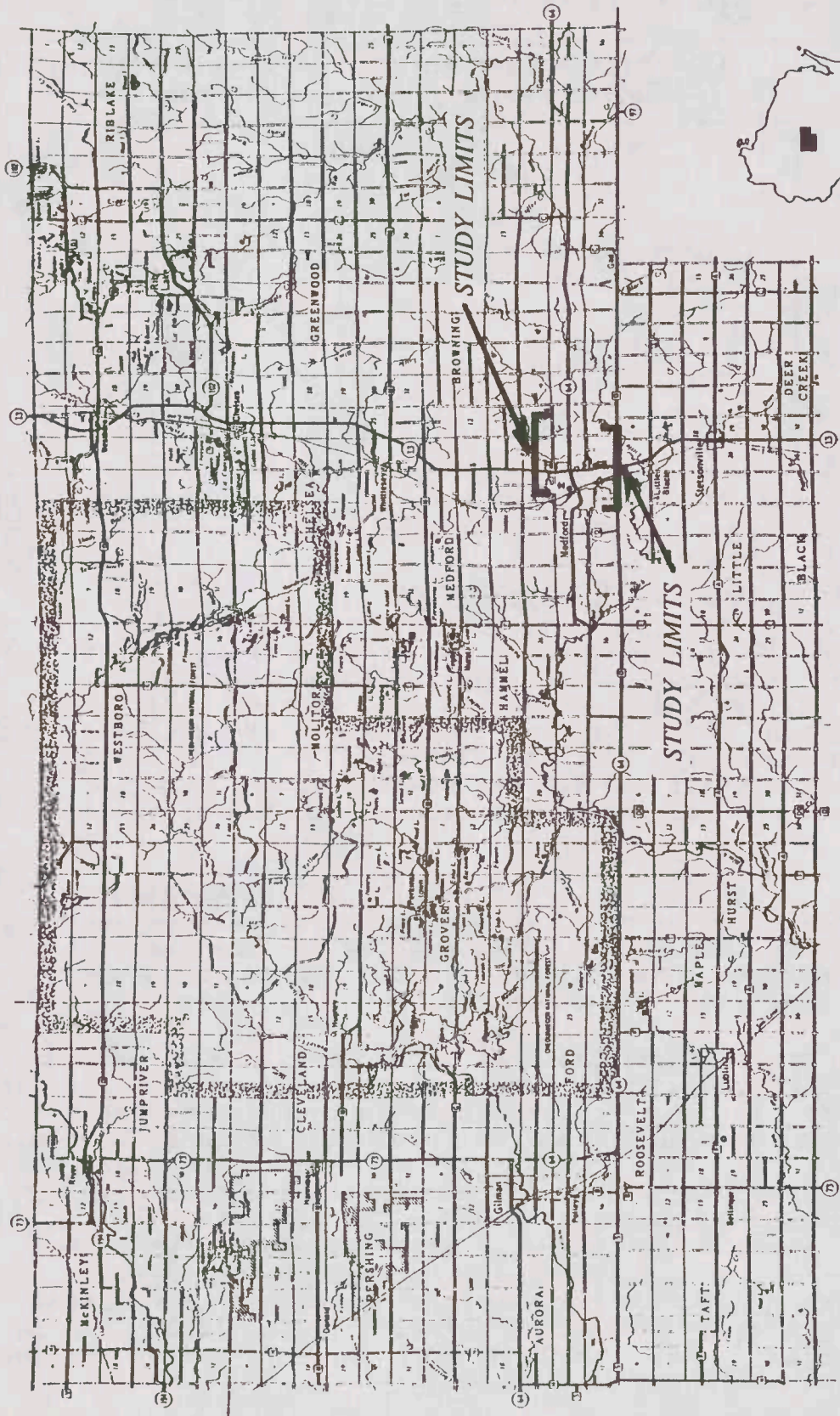
Upstream Study Limit	3.43 square miles
Downstream Study Limit	5.83 square miles
At the Mouth	6.11 square miles

Correction Creek is in Hydrologic Unit 07040007-010.

The climate is typically continental. January temperatures average 13.5 degrees Fahrenheit ($^{\circ}\text{F}$). July, the warmest month, has an average temperature of 68.4 $^{\circ}\text{F}$. The average maximum temperature for July is 80 $^{\circ}\text{F}$ and the average minimum is 57 $^{\circ}\text{F}$. Precipitation averages 33 inches per year (9).

The major soils in this watershed are Withee Silt loam (more than half the watershed), Loyal silt loam, Rib silt loam, Marshfield silt loam and Antigo silt loam. The soils in the watershed are typically silty and overlay loamy till or gravelly sand outwash. Most soils in the watershed are somewhat poorly drained or poorly drained. There are minor areas of moderately well drained and well drained soils. Slopes are generally less than 6 percent.

The Correction Creek watershed contains a portion of the eastern side of the City of Medford. Other than this small urban portion (about 0.52 sq. mi.), the watershed is primarily agricultural with some wetland and wooded areas (see Table 1). The wetland areas are located primarily within the Correction Creek floodplain.



TAYLOR COUNTY WISCONSIN
Correction Creek Floodplain Management Study

LOCATION MAP

Location in Wisconsin

Table 1: Land use Within the Correction Creek Watershed

Land Use	Area Within Watershed Square Miles	Percent of Total Watershed Area
Urban (City of Medford)	0.52 sq. mi.	8.6 %
Cropland	3.96	64.8
Woods	0.88	14.4
Marsh	0.56	9.1
Farmsteads & Roads	0.19	3.1
Total	6.11 sq. mi.	100.0 %

Natural and Beneficial Floodplain Values

The undeveloped floodplain in the study area, north of Hwy 64, consists primarily of bottomland tree and shrub species, consisting of willow, tag alder, black ash, dogwood, white spruce, elm, aspen, red maple, and tamarack. There are also scattered open sedge meadows. The floodplain south of Hwy 64 consists of open cattail marshes and sedge meadows. Small bottomland trees and shrubs are scattered along the upland borders.

The floodplain is habitat for a number of wildlife species including white-tailed deer, squirrels, rabbits, raccoon, beaver, mink, muskrat, fox, and otter. Bird species include numerous songbirds, woodpeckers, hawks, owls, ruffed grouse, woodcock, mallards, bluewing teal, and woodducks.

In addition to providing wildlife habitat, the floodplain provides natural storage areas for floodwater during peak flows. The natural floodplain also plays a role in trapping sediment from the surrounding cropland and in keeping streambanks stable.

Correction Creek provides minor fish habitat. The fish population includes forage minnows and a few northern pike. There is approximately 1500 acres of prime farmland within the watershed. There are no sites on the National Register of Historic Places, or sites with important historical or cultural values within the study limits. A majority of the floodplain is in wetlands and will remain wetland under current Federal policy.

There are no archeological properties recorded for the study area. However, this area of Wisconsin has not been subject to any large scale archeological investigation. According to the State Historical Society of Wisconsin, this study area has good potential for archeological discovery. Prior to any ground-disturbing activities within the study area, the State Historical Society is required by Section 106 of the National Historic Preservation Act, to review and comment on the site. It is likely that the State Historical Society would recommend an archeological survey prior to any ground-disturbing activities within the study area.

Flooding Problems

There is no record of significant flash flooding on Correction Creek; however, spring snowmelt has the potential for causing flood damage. Although there is no record of specific buildings that had been flooded in the past, flooding has occurred along Correction Creek in low lying marshy areas and upstream of railroad and highway bridges. Several buildings have been identified within the 100-year floodplain boundary (see Table 2). There also is a potential for damage to roads, railroads, bridges and properties within the floodplain. In addition, future development in the watershed has the potential for increasing the storm runoff and the flood damage. Regulation of land use within the watershed and preservation of the upstream wetland areas will help to minimize this increase in storm runoff and flood damage.

Existing Floodplain Management

The City of Medford had adopted a floodplain ordinance in 1978. The ordinance was approved by state and federal agencies in July 1988. Taylor County has not adopted a floodplain ordinance. Therefore, the county is ineligible for the National Flood Insurance Program and cannot receive disaster assistance or make federally insured loans in flood hazard areas. Areas that could be annexed to the city in the future should be developed in conformance with the city's floodplain ordinance.

Table 2: Buildings Identified Within the 100-Year Floodplain

Building Description	Location	Map Sheet Number ¹
Well House ²	N of Peterson Rd and E of State Hwy 13 (S of X-Section O) ³	19
Garage	S of Peterson Rd and E of State Hwy 13 (Between X-Sections L and M)	19
Mink Sheds	NW of State Hwy 13 Bridge (At the N end of X-Section J)	19
"Vic's Classics" Used Cars ⁴	E of State Hwy 13 Bridge (E of X-Section K)	24
Correction Creek Chiropractic	E of State Hwy 13 Bridge (E of X-Section K)	24
House, 2 Garages and a Shed	E of State Hwy 13 Bridge (E of X-Section K)	24

¹ See the Index to the Flood Hazard Maps on Page 9 and the Maps on Pages 10-18.

² The Well House is within the floodway.

³ These Cross Sections were used in WSP2 modelling and are given on the Maps on Pages 10-18.

⁴ This building is partly within the floodway.

Alternatives for Mitigating Flood Damages to Existing and Future Development

A. The city will incorporate the floodplain maps and flood profiles from this study into their floodplain ordinance and provide enforcement. The city will use the 100-year flood and floodway boundaries and the 100-year flood profile from this study to regulate floodplain land use in accordance with Wisconsin Administrative Code NR. 116 (Wisconsin's Floodplain Management Program). The floodway lines were developed to indicate the channel and those portions of the adjoining floodplain which are necessary to carry the regional (100-year

frequency) flood discharge without any measurable increase in the regional flood heights. These lines were developed assuming that the area landward of the lines will not be available to convey flood flows.

B. Floodplain management techniques should include restoring and/or preserving the natural values of the floodplain area (see the "Natural and Beneficial Floodplain Values" section). The wetland areas, in addition to providing wildlife habitat, provide natural storage for floodwaters during peak flows. Therefore, it is important to preserve these wetland areas. Floodplain wildlife resources can be managed for observation as well as for recreational hunting and fishing. Floodplain areas can be used as parks or nature study centers for outdoor learning experiences.

C. The county can apply existing standards set forth in the county's subdivision control ordinance to regulate development in unsuitable areas and minimize erosion and diffused surface water runoff within the watershed.

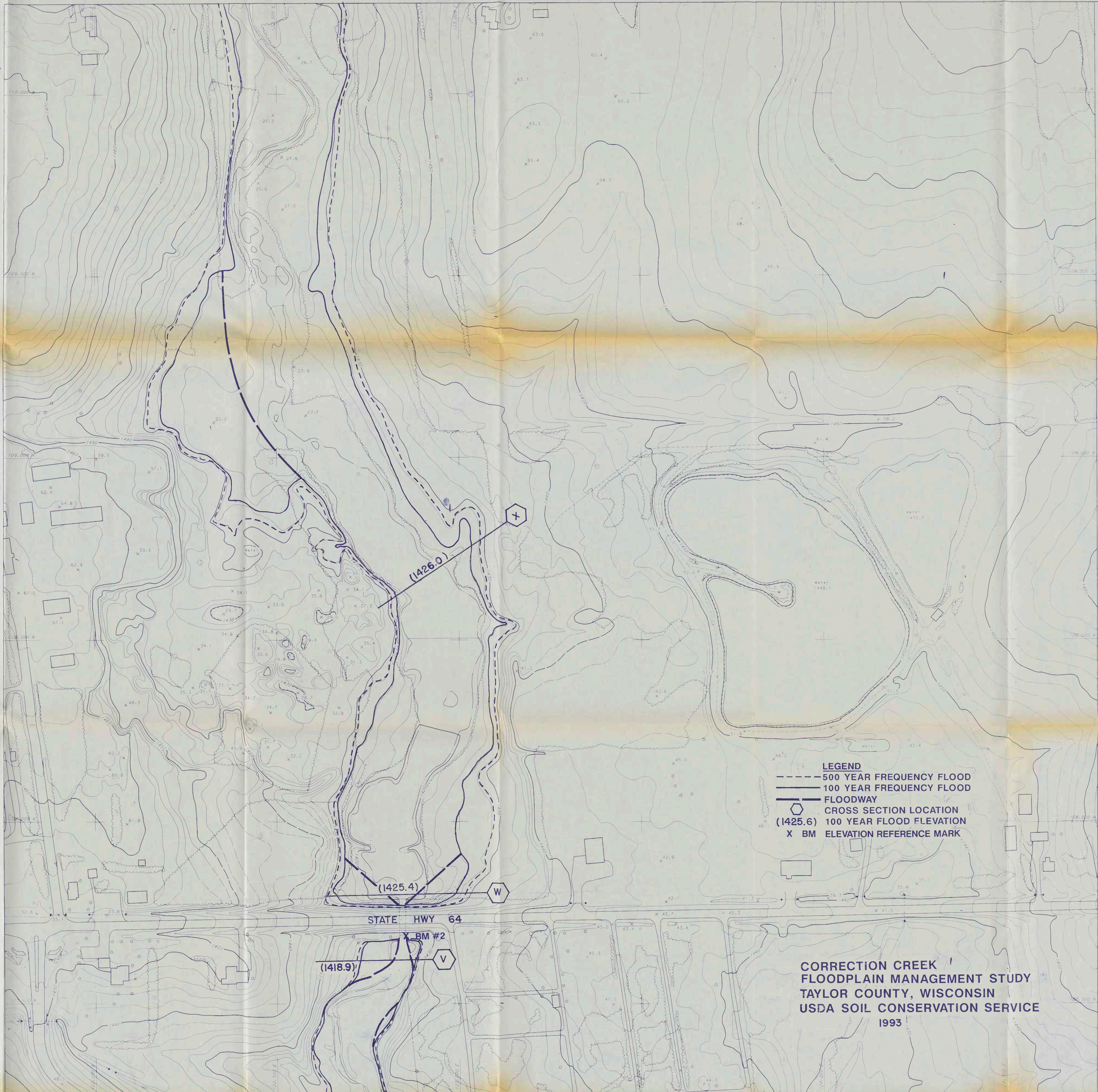
D. The county can use the floodplain maps as part of their developing and adopting a floodplain ordinance.

CROSS SECTION LOCATION

CORRECTION CREEK		
CROSS SECTION	PAGE NUMBER(S)	MAP SHEET(S)
H	17	24
I	17	24
J	14 & 17	19 & 24
K	14 & 17	19 & 24
L	14 & 15	19 & 20
M	14 & 15	19 & 20
N	14 & 15	19 & 20
O	14	19
P	12 & 14	14 & 19
Q	12, 14 & 15	14, 19 & 20
R	13 & 15	15 & 20
S	13	15
T	13	15
U	13	15
V	11	9
W	11	9
X	11	9
Y	10	4
Z	10	4
AA	10	4

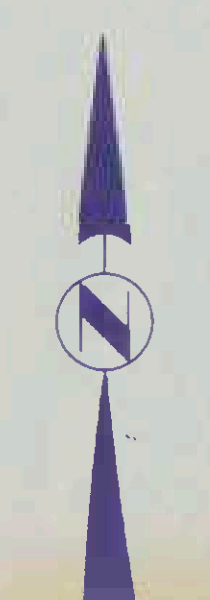
INDEX TO FLOOD HAZARD MAPS





- LEGEND**
- PAVED ROAD
 - GRAVEL ROAD
 - QUADRANT
 - TRAIL
 - RAILROAD
 - PAVED DRIVEWAY
 - GRAVEL PARKING
 - SIDEWALK
 - BRIDGE
 - WING WALL
 - WOLLETT
 - LAKE/IMPOND
 - RIVER/STREAM
 - DRAINAGE DITCH
 - SWAMP
 - TREE COVER
 - FENCE
 - WALL
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 - RECREATION AREA
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 - POLE
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 - STREET LIGHT
 - HORIZ. VERT. CONTROL
 - HORIZONTAL CONTROL
 - VERTICAL CONTROL

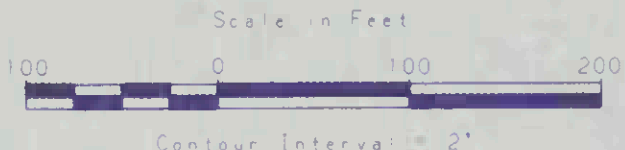
ANY DISPUTE WITH THE ACTUAL
FLOOD LIMITS SHOULD BE RESOLVED
BY USING THE PROFILE ELEVATIONS
AND FIELD SURVEY



- LEGEND**
- 500 YEAR FREQUENCY FLOOD
 - 100 YEAR FREQUENCY FLOOD
 - FLOODWAY
 - CROSS SECTION LOCATION
 - (1425.6) 100 YEAR FLOOD ELEVATION
 - X BM ELEVATION REFERENCE MARK

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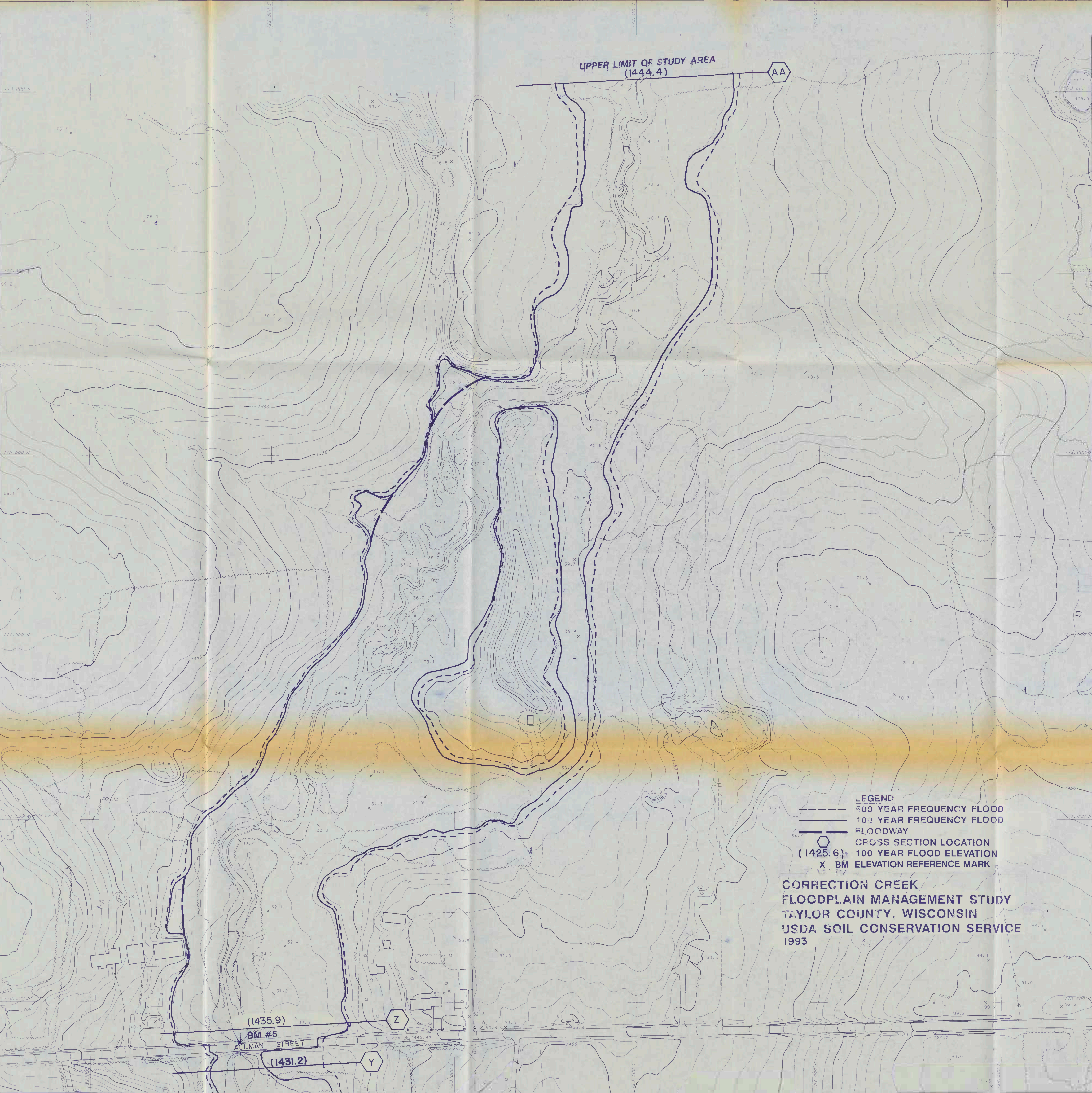
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**CORRECTION CREEK
FLOODPLAIN MANAGEMENT STUDY
TAYLOR COUNTY, WISCONSIN
USDA SOIL CONSERVATION SERVICE
1993**

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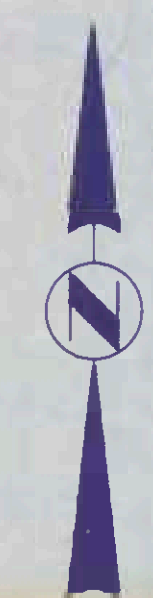
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LEGEND

- PAVED ROAD
- GRAVEL ROAD
- GUARDRAIL
- TRAIL
- RAILROAD
- PAVED DRIVEWAY
- PAVED PARKING
- GRAVEL PARKING
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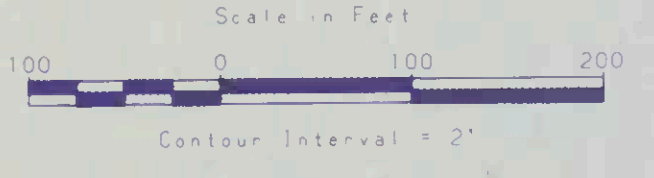
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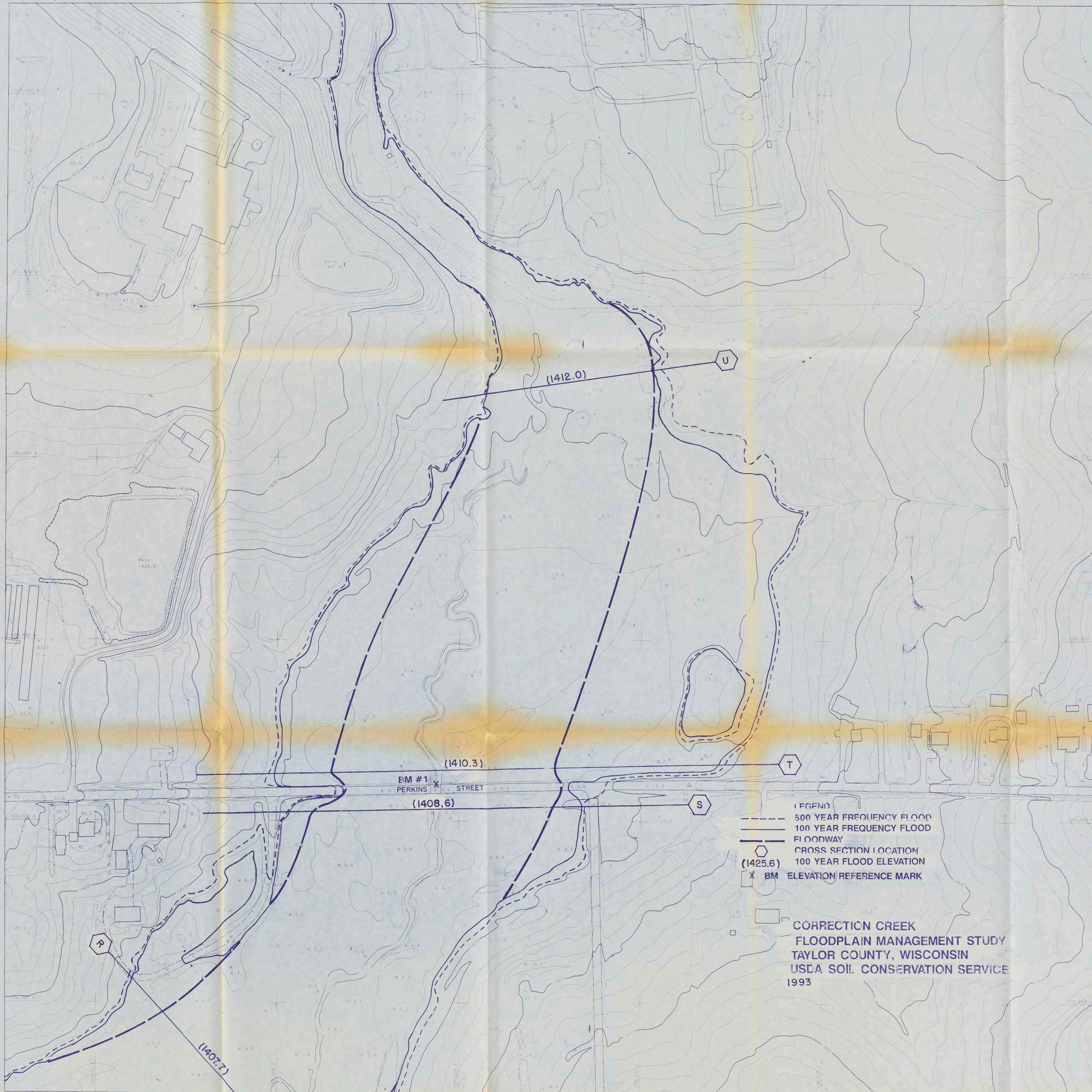
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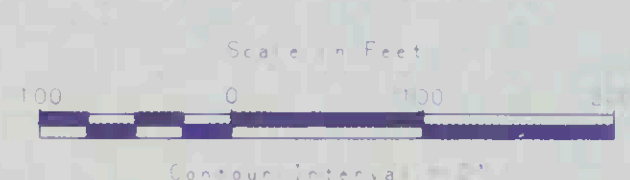
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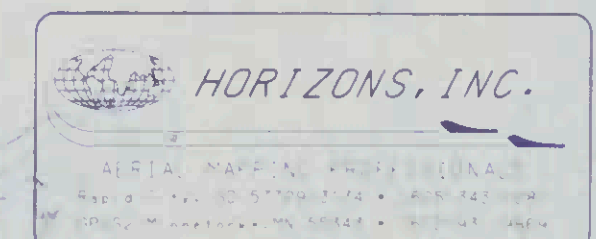


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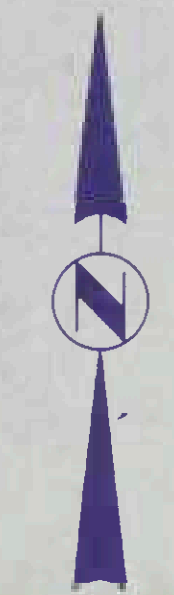


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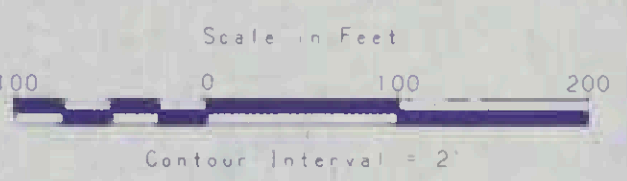
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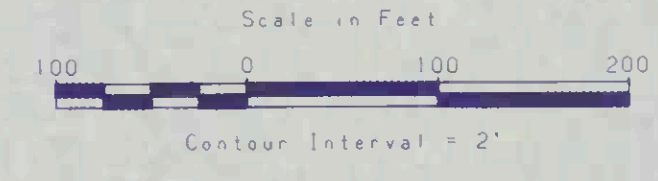


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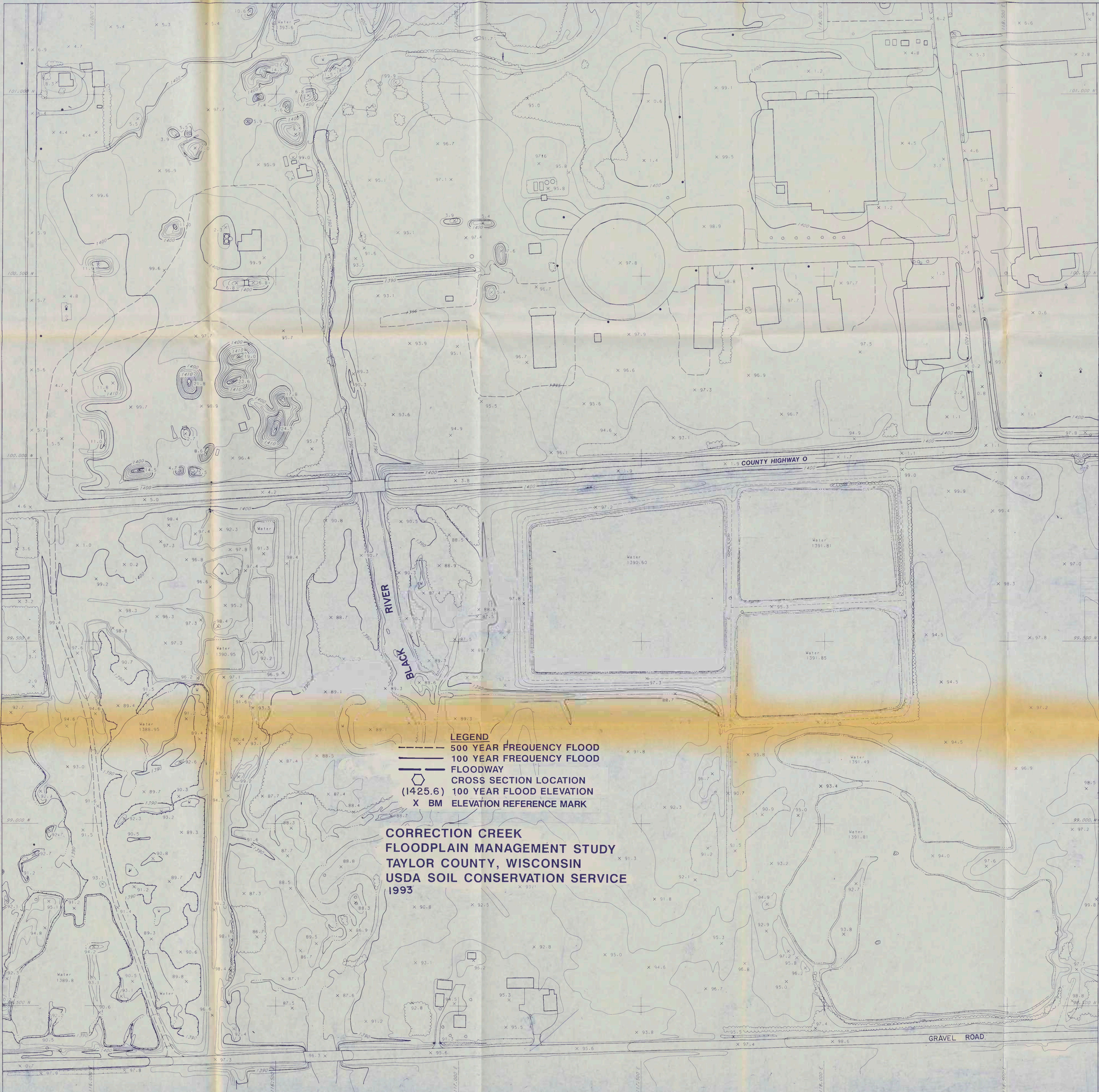
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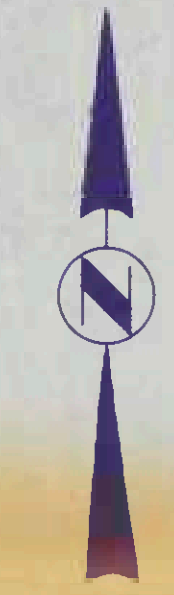
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 - SWIMMING POOL
 - CONCRETE SLAB
 - SIGNS
 - TANK
 - INDEX CONTOUR
 - INTERMEDIATE CONTOUR
 - DEPRESSION CONTOUR
 - OBSOLETE CONTOUR
 - SPOT ELEVATION
 - POLE
 - ELECTRICAL POLE
 - STREET LIGHT
 - HORIZ/VERT CONTROL
 - HORIZONTAL CONTROL
 - VERTICAL CONTROL

ANY DISPUTE WITH THE ACTUAL
FLOOD LIMITS SHOULD BE RESOLVED
BY USING THE PROFILE ELEVATIONS
AND FIELD SURVEY.

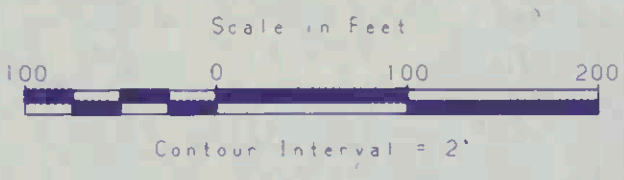


- LEGEND**
- 500 YEAR FREQUENCY FLOOD
 - 100 YEAR FREQUENCY FLOOD
 - FLOODWAY
 - CROSS SECTION LOCATION
(1425.6) 100 YEAR FLOOD ELEVATION
 - X BM ELEVATION REFERENCE MARK

**CORRECTION CREEK
FLOODPLAIN MANAGEMENT STUDY
TAYLOR COUNTY, WISCONSIN
USDA SOIL CONSERVATION SERVICE
1993**

SHEET INDEX

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11	12	13	14	15
16	17	18	19	20
21	22	23	24	25
26				



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Medford, Wisconsin
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LEGEND

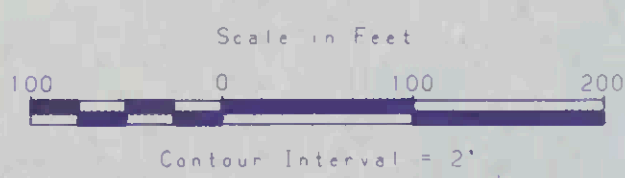
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- GRAVEL ROAD
- GUARDRAIL
- TRAIL
- RAILROAD
- PAVED DRIVEWAY
- PAVED PARKING
- GRAVEL PARKING
- SIDEWALK
- BRIDGE
- WING WALL
- CULVERT
- LAKE/POND
- RIVER/STREAM
- DRAINAGE LINE
- SWAMP
- TREE COVER
- FENCE
- WALL
- ATHLETIC FIELD
- RECREATION COURT
- RECREATION AREA
- BUILDING
- BLOS. UNDER COVER
- UNIDENTIFIED OBJECT
- SWIMMING POOL
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- TANK
- INDEX CONTOUR
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21	22	23	24	25
26				



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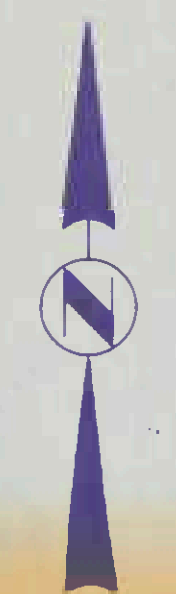
LEGEND
--- 500 YEAR FREQUENCY FLOOD
--- 100 YEAR FREQUENCY FLOOD
--- FLOODWAY
○ CROSS SECTION LOCATION
(1425.6) 100 YEAR FLOOD ELEVATION
X BM ELEVATION REFERENCE MARK
**CORRECTION CREEK
FLOODPLAIN MANAGEMENT STUDY
TAYLOR COUNTY, WISCONSIN
USDA SOIL CONSERVATION SERVICE
1993**



LEGEND

- PAVED ROAD
- GRAVEL ROAD
- GUARDRAIL
- TRAIL
- RAILROAD
- PAVED DRIVEWAY
- PAVED PARKING
- GRAVEL PARKING
- SIDEWALK
- BRIDGE
- WIND WALL
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ANY DISPUTE WITH THE ACTUAL FLOOD LIMITS SHOULD BE RESOLVED BY USING THE PROFILE ELEVATIONS AND FIELD SURVEY.

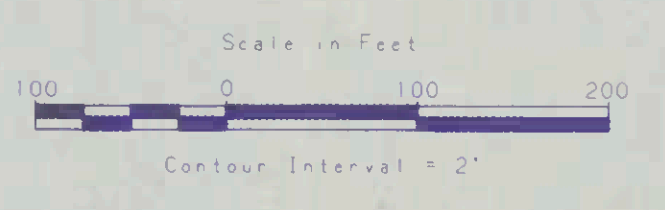


- LEGEND
- 500 YEAR FREQUENCY FLOOD
 - 100 YEAR FREQUENCY FLOOD
 - FLOODWAY
 - CROSS SECTION LOCATION (1425.6)
 - 100 YEAR FLOOD ELEVATION
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CORRECTION CREEK
FLOODPLAIN MANAGEMENT STUDY
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21	22	23	24	25
26				



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GLOSSARY

CHAPTER NR. 116 - WISCONSIN'S FLOODPLAIN MANAGEMENT PROGRAM SUMMARY OF NR. 116.03 - DEFINITIONS

Channel: a natural or artificial watercourse with definite bed and banks to confine and conduct the normal flow of water.

Department: the State of Wisconsin, Department of Natural Resources (DNR).

Elevation Reference Marks: Any permanent or temporary benchmark that was used during the field survey for this study. All survey data was referenced to National Geodetic Vertical Datum (NGVD).

Encroachment: any fill, structure, building, use, accessory use, or development in the floodway.

Encroachment/Floodway Lines: Encroachment/floodway lines are limits of obstruction to floodflows. These lines are on both sides of and are generally parallel to the river or stream. The lines are established by assuming that the area landward (outside) of the encroachment/floodway lines will be ultimately developed in such a way that it will not be available to convey floodflows.

Flood: A general and temporary condition of partial or complete inundation of normally dry land areas caused by the overflow or rise of rivers, streams or lakes.

Flood Frequency: the probability of a flood occurrence generally determined from statistical analyses. The frequency of a particular floodflow is usually expressed as occurring on the average, once in a specified number of years. The frequency can also be expressed as a percent chance of occurring in any given year. Any particular floodflow could, however, occur more frequently than once in any given year.

Floodfringe: that portion of the floodplain outside of the floodway, which is covered by floodwaters during the regional flood. It is generally associated with standing water rather than rapidly flowing water.

Floodplain: that land which has been or may be covered by floodwater during the regional flood. The floodplain includes the floodway, floodfringe, shallow depth flooding and flood storage.

Floodplain Management: involves the full range of public policy and action for insuring the wise use of floodplains. It includes everything from the collection and dissemination of flood data to actual acquisition of floodplain lands; and the enactment and administration of codes, ordinances, and statutes for land use in the floodplain.

Flood Proofing: any combination of structural provisions, changes, or adjustments to properties and structures subject to flooding, primarily for the purpose of reducing or eliminating flood damage.

Flood Protection Elevation: corresponds to an elevation 2 feet above the regional flood elevation. Also see: Freeboard.

Flood Storage: those floodplain areas where the storage of flood waters has been taken into account in reducing the regional flood discharge.

Floodway: the channel of a river or stream and those portions of the floodplain adjoining the channel required to carry the regional flood discharge.

Freeboard: a safety factor usually expressed in terms of a certain number of feet above the calculated flood level. Freeboard compensates for the many unknown factors that contribute to flood heights greater than that calculated. These unknown factors include, but are not limited to, ice jams, debris accumulation, wave action, obstruction of bridge openings and floodways, the effects of urbanization on the hydrology of the watershed, loss of flood storage areas due to development and aggradation of the river or streambed.

High Flood Damage Potential: potential damage as a result of flooding that is associated with any danger to life or health or any significant economic loss to a structure or building and its contents.

Hydraulic Floodway Lines: those lines that delineate the channel and those portions of the adjoining floodplain which are necessary to carry the regional flood discharge without any measurable increase in the regional flood heights.

Hydraulic Reach: that portion of the river or stream extending from one significant change in the hydraulic character of the river or stream to the next significant change. These changes are usually associated with breaks in the slope of the water surface profile, and may be caused by bridges, dams, expansion and contraction of the waterflow, and changes in streambed slope or vegetation.

Increase in Regional Flood Height: a rise in the regional flood elevation, equal to or greater than 0.01 foot, resulting from a comparison of existing and proposed conditions. This value is attributable to development in the floodplain, not to the manipulation of mathematical variables such as roughness factors, expansion and contraction coefficients and discharge.

Levee: a continuous dike or embankment of earth constructed approximately parallel to a river or stream to prevent flooding of certain areas of land.

National Geodetic Vertical Datum (NGVD): elevations referenced to mean sea level datum, 1929 adjustment.

Obstruction to Flow: any development which physically blocks the conveyance of flood waters such that this development by itself or in conjunction with any future similar development will cause an increase in regional flood height.

Official Floodway Lines: those lines which have been adopted by the county, city or village, approved by the department, and which are shown on the official floodplain zoning maps and used for regulatory purposes. These official floodway lines are established assuming that the area landward of the lines will not be available to convey flood flows.

Regional Flood: a flood, representative of large floods that have occurred in Wisconsin, which may be expected to occur on a stream because of similar physical characteristics. It is based upon a statistical analysis of the watershed's streamflow records and/or an analysis of rainfall and runoff characteristics in the general watershed region. The flood frequency of the regional flood is once in every 100 years; this means that in any given year there is a 1 percent chance that the regional flood may occur or be exceeded. During a typical 30-year mortgage period, the regional flood has a 26 percent chance of occurring.

Shallow Depth of Flooding Areas: those areas where the flooding does not exceed one foot in depth nor 6 hours in duration during the regional flood.

Structure: any manmade object with form, shape and utility, either permanently or temporarily attached to or placed upon the ground, riverbed, streambed, or lakebed.

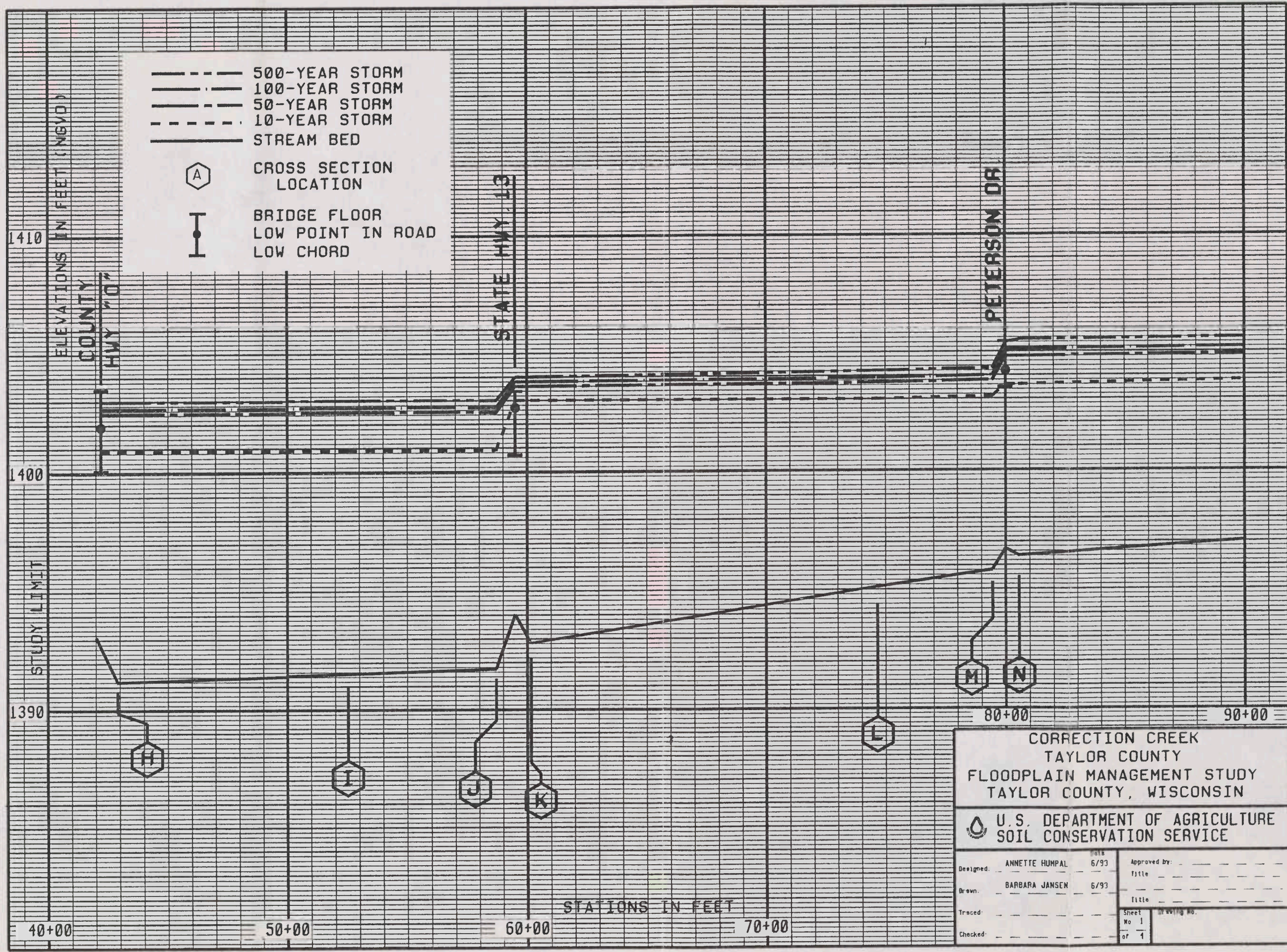
Watershed: a region or area contributing ultimately to the water supply of a particular watercourse or body of water.

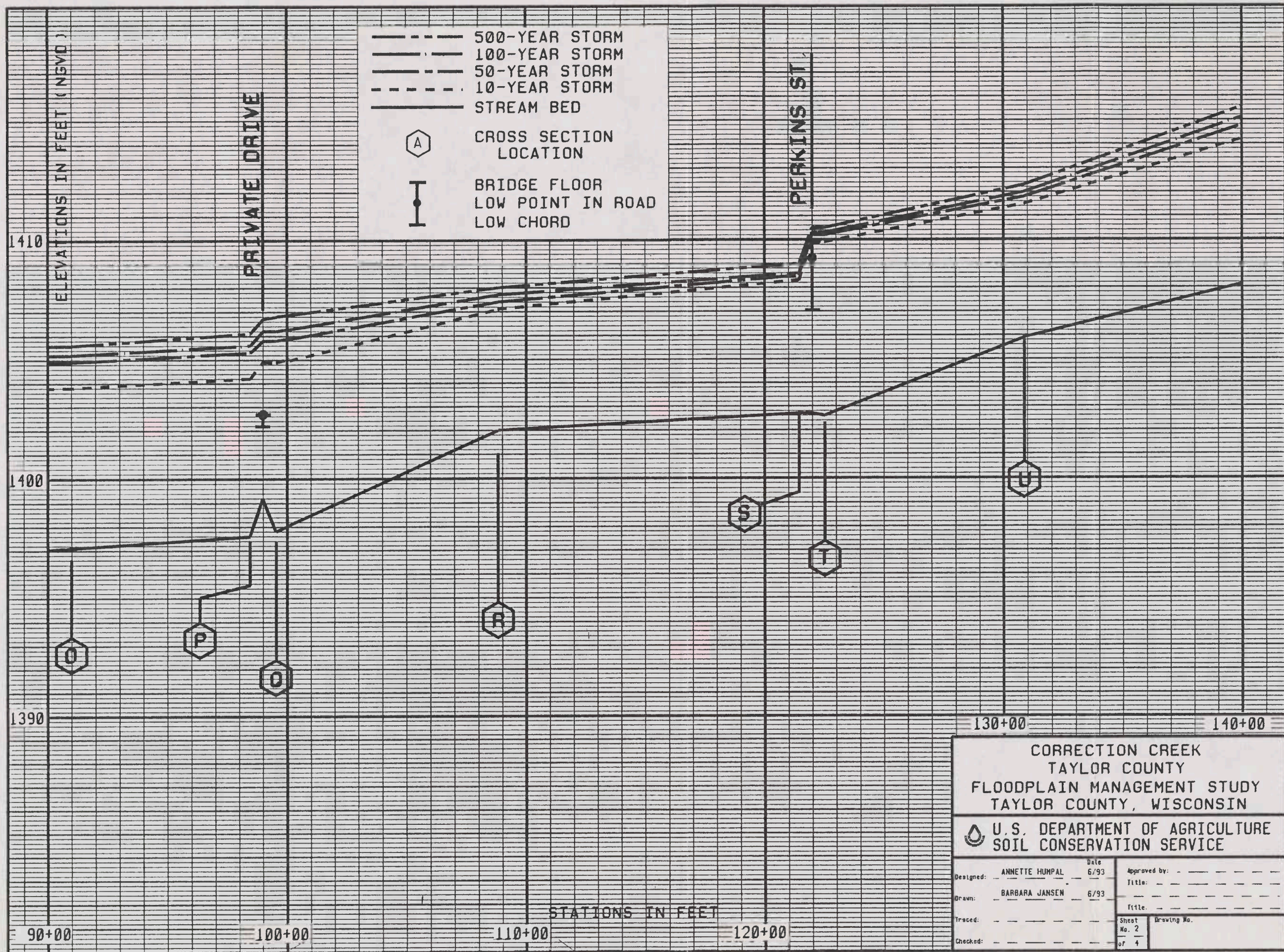
Water Surface Profile: a graphical representation of the elevation of the water surface for various positions along a river or stream at a certain floodflow. A water surface profile based upon regional flood is used in regulating floodplain areas.

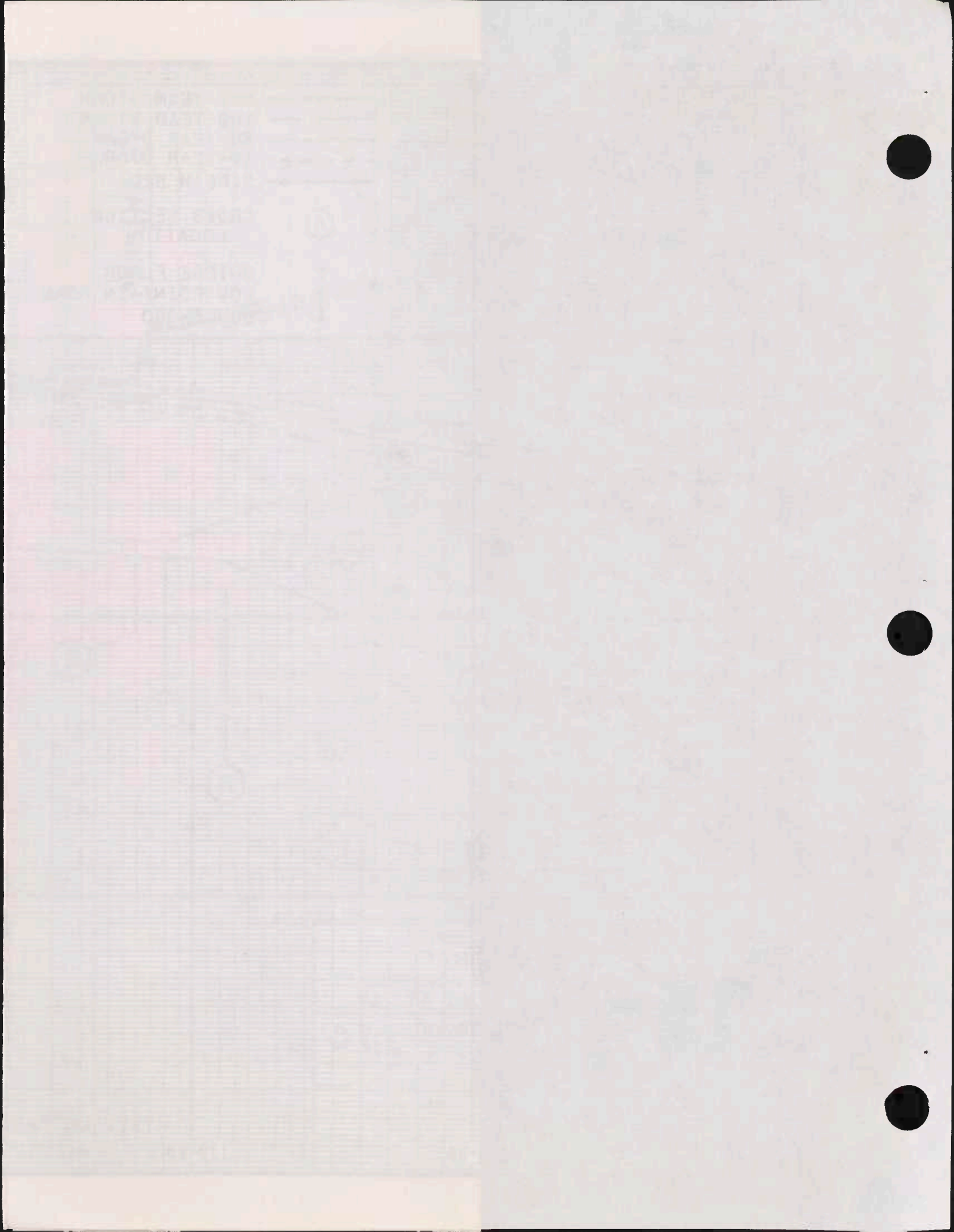
BIBLIOGRAPHY

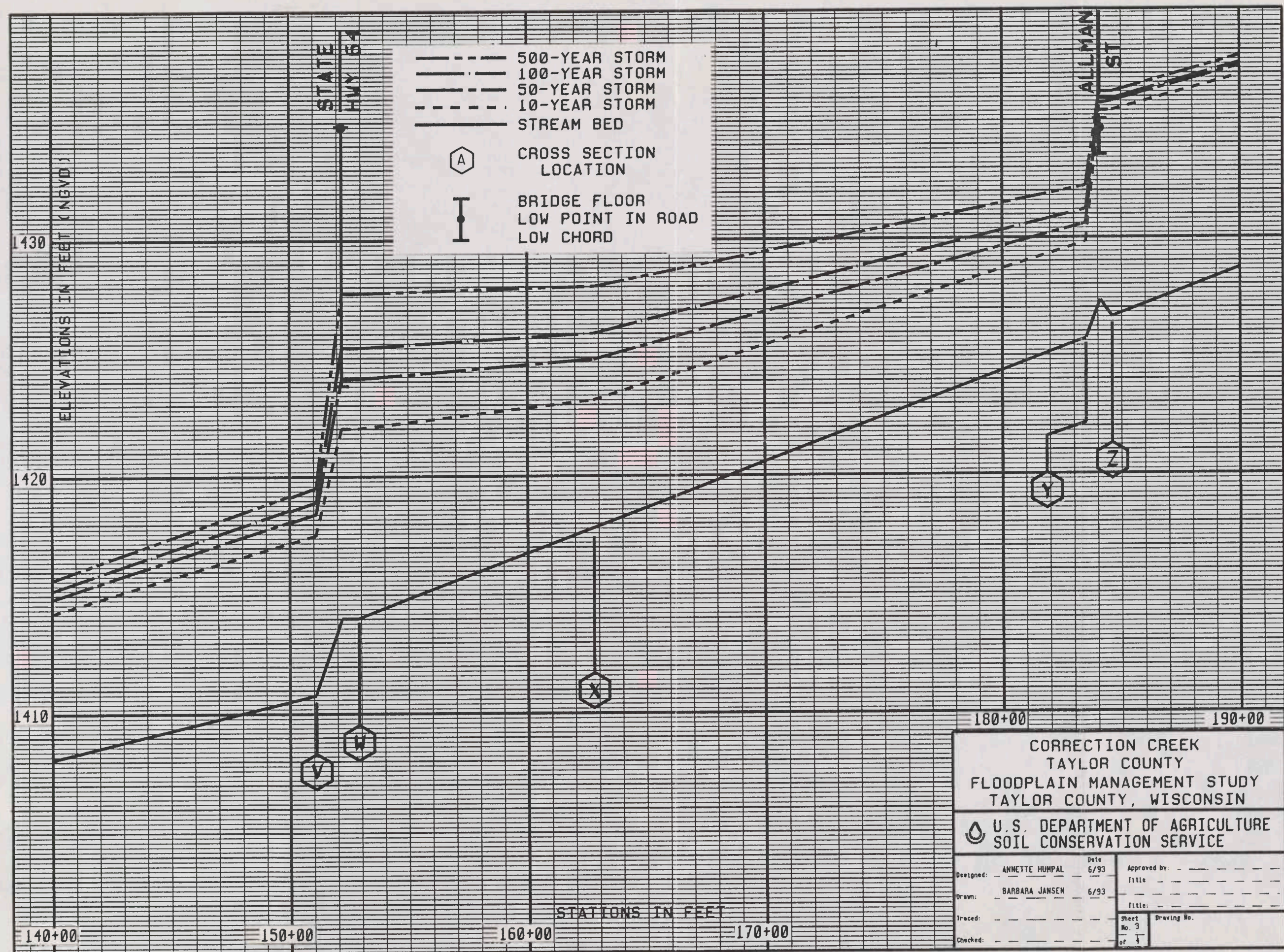
1. Krug, William R., Conger, Duane H. and Gebert, Warren A.; Flood-Frequency Characteristics of Wisconsin Streams, U. S. Department of the Interior, Geological Survey, Water Resources Investigations Report 91-4128, Madison, Wisconsin, 1992.
2. Interagency Advisory Committee on Water Data. Guidelines for Determining Flood Flow Frequency, Bulletin #17B, March 1982, U. S. Department of the Interior Geological Survey, Office of Water Data Coordination.
3. Shaw & Fredine, 1956. Wetlands of the United States. United States Department of the Interior, Fish and Wildlife Service, Circular 39, 67 pages.
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10. Wisconsin's Floodplain Management Program, Wisconsin Administrative Code NR. 116, Department of Natural Resources, February, 1986.

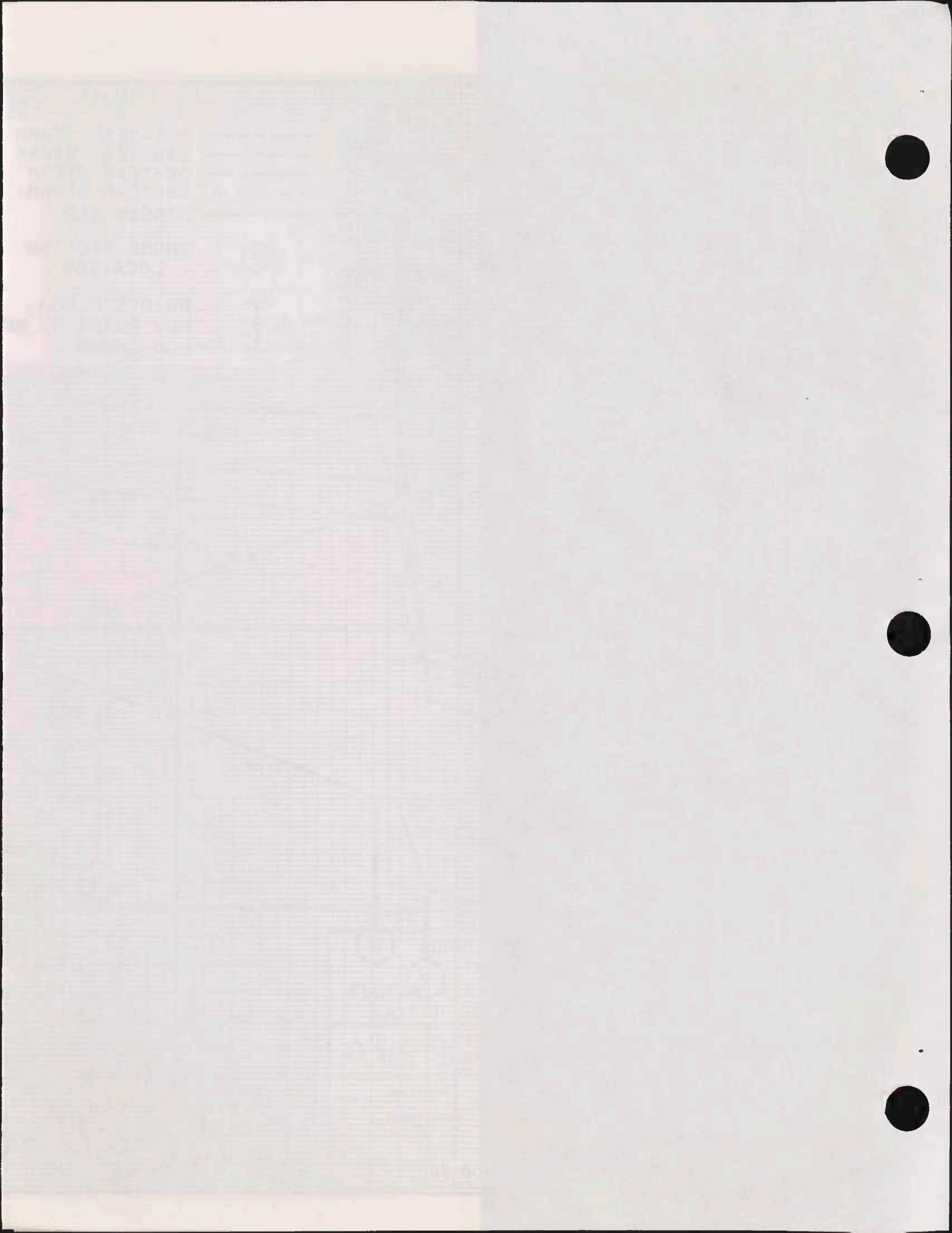
APPENDIX A
FLOOD PROFILES

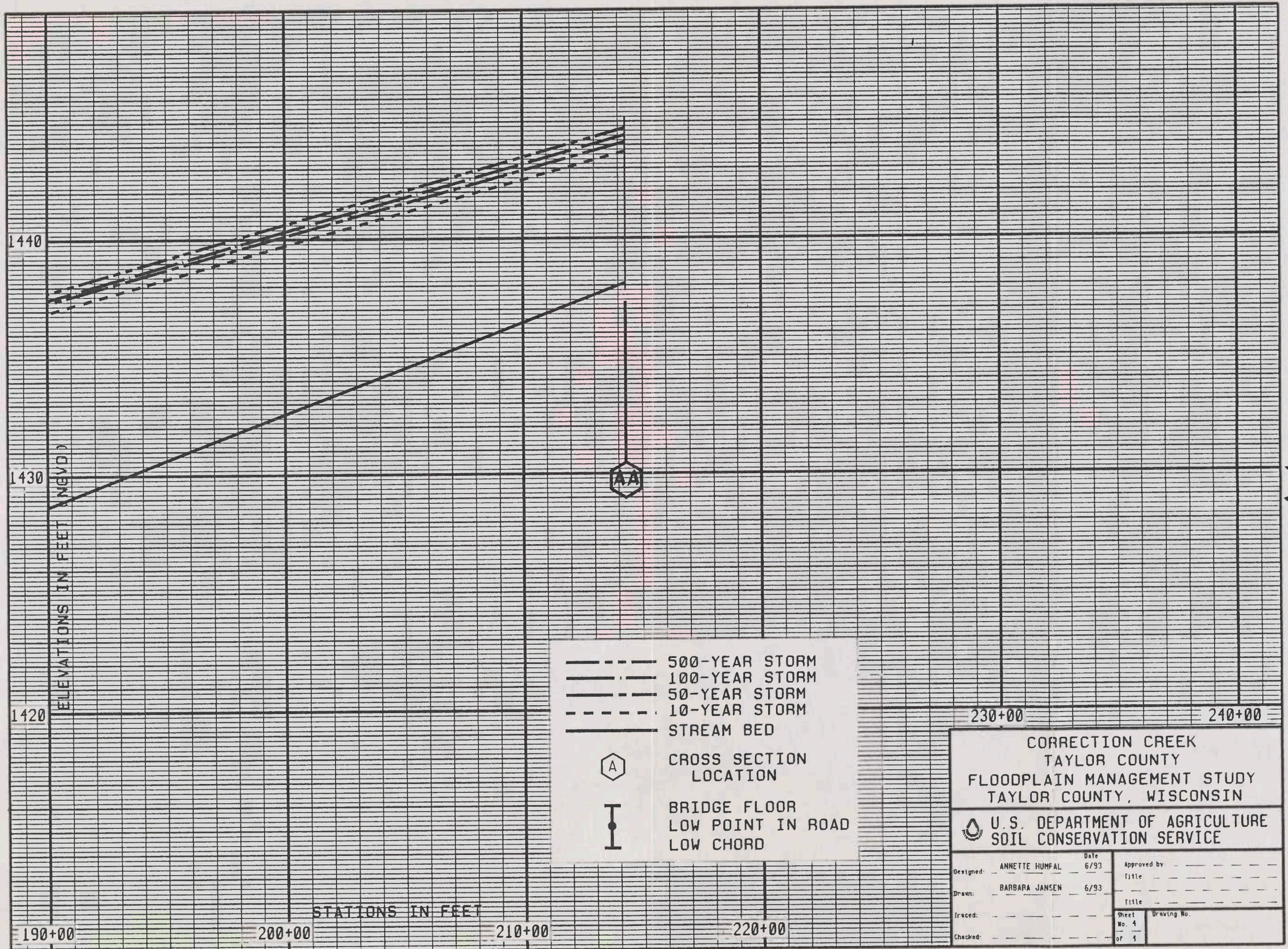















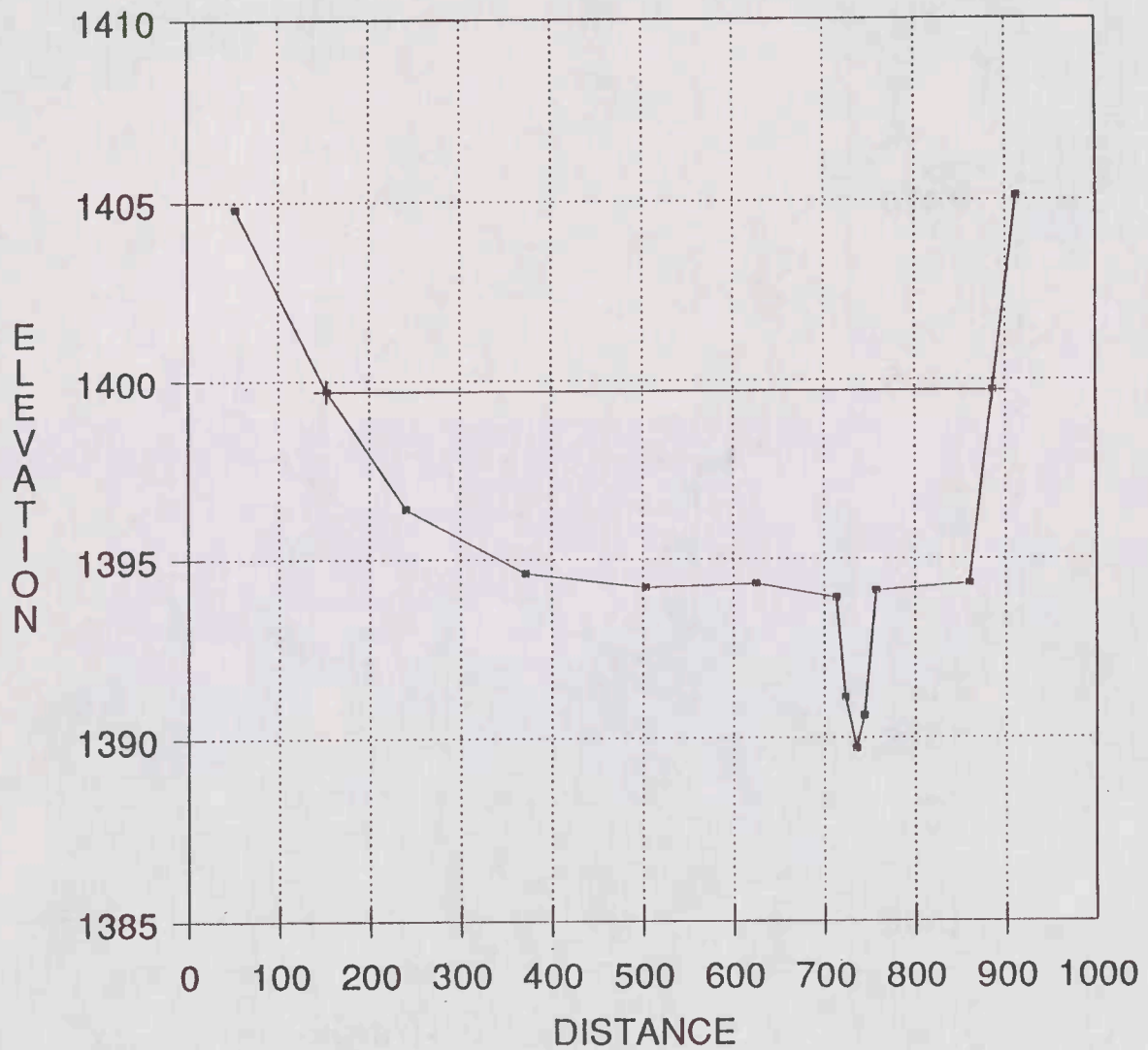
- 500-YEAR STORM
- . - . - 100-YEAR STORM
- 50-YEAR STORM
- 10-YEAR STORM
- STREAM BED
-  CROSS SECTION LOCATION
-  BRIDGE FLOOR LOW POINT IN ROAD LOW CHORD

CORRECTION CREEK TAYLOR COUNTY FLOODPLAIN MANAGEMENT STUDY TAYLOR COUNTY, WISCONSIN			
 U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE			
Designed: ANNETTE HUMFAL	Date: 6/93	Approved by: _____	
Drawn: BARBARA JANSEN	Date: 6/93	Title: _____	
Traced: _____	Sheet No. 4	Drawing No. _____	
Checked: _____	of 1		

A-4

APPENDIX B
TYPICAL CROSS SECTIONS

CORRECTION CREEK
FLOODPLAIN MANAGEMENT STUDY
CROSS SECTION "F"



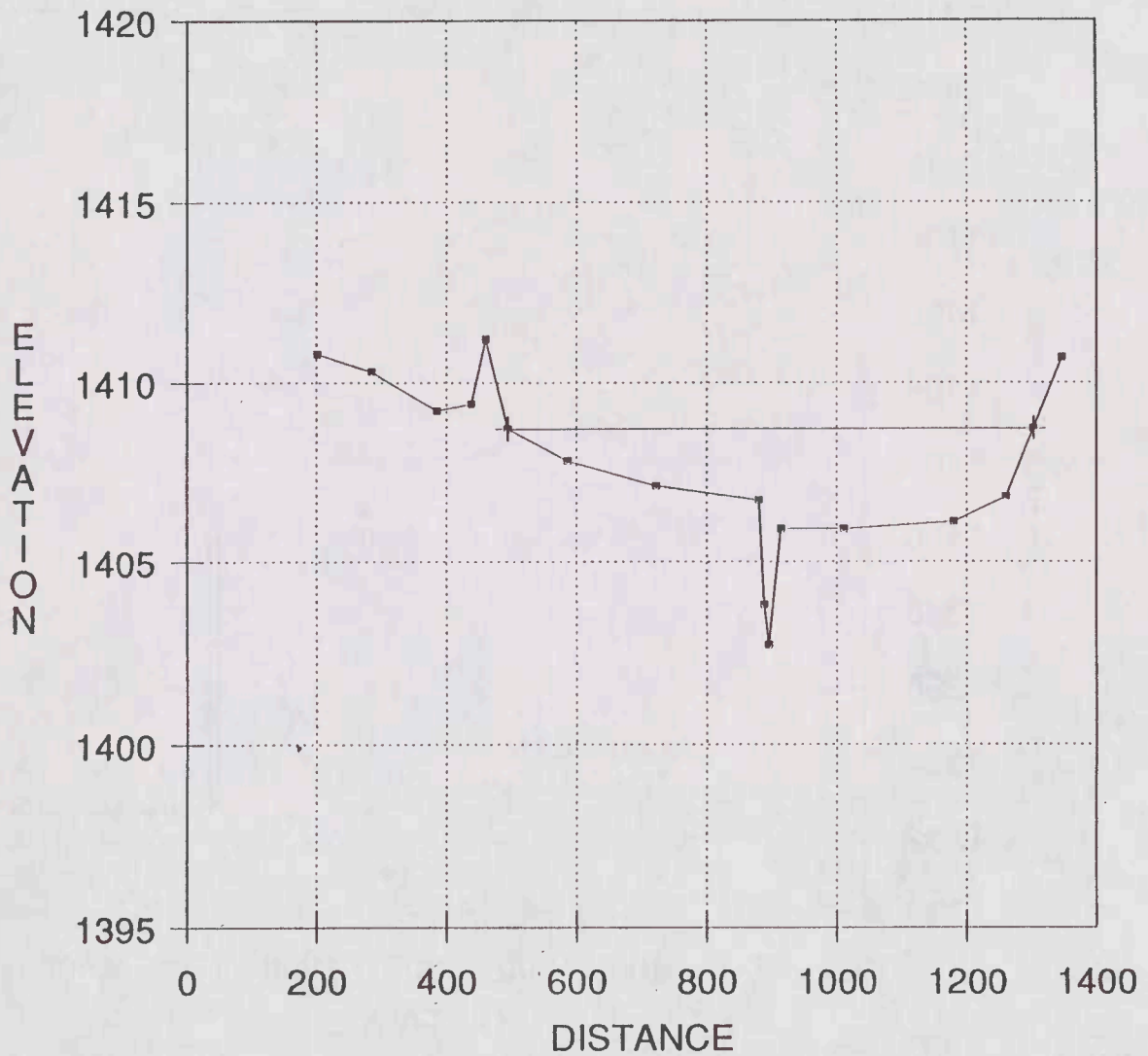
—+— 100 YEAR FLOOD

CORRECTION CREEK
FLOODPLAIN MANAGEMENT STUDY
CROSS SECTION "J"



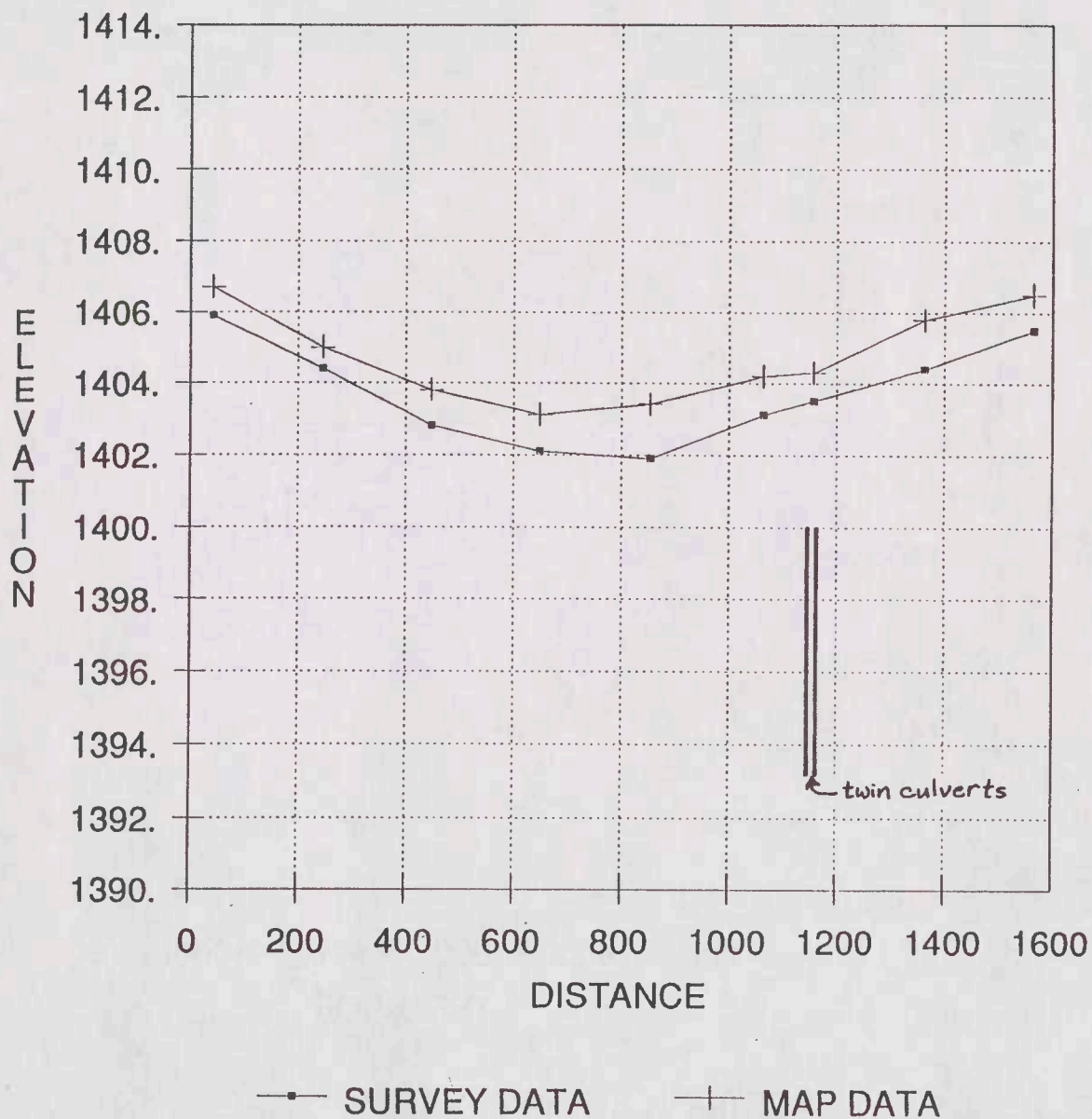
—+— 100 YEAR FLOOD

CORRECTION CREEK
FLOODPLAIN MANAGEMENT STUDY
CROSS SECTION "S"

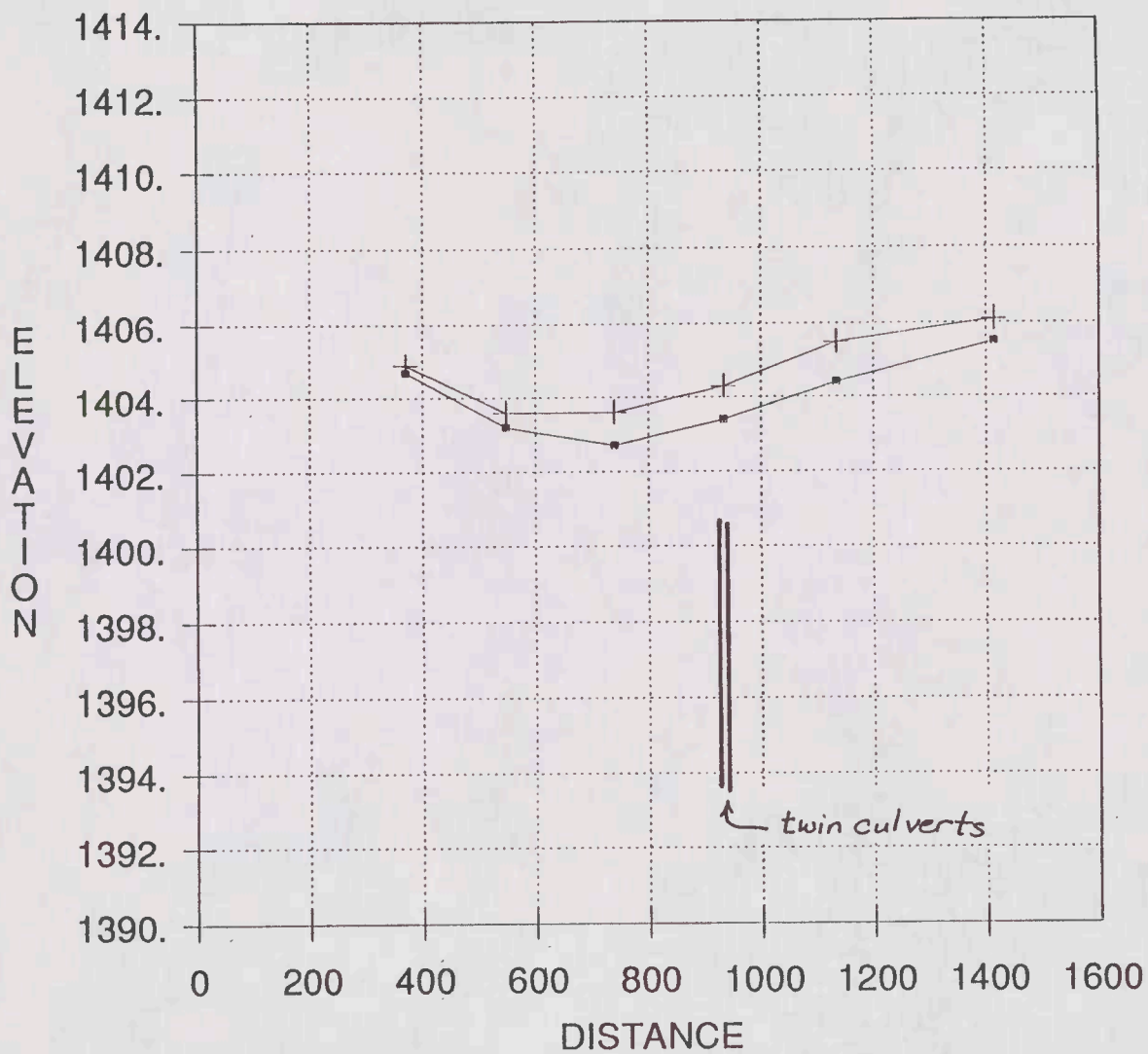


—+— 100 YEAR FLOOD

CORRECTION CREEK FLOODPLAIN MANAGEMENT STUDY COUNTY HIGHWAY "O"



CORRECTION CREEK FLOODPLAIN MANAGEMENT STUDY STATE HIGHWAY "13"



—■— SURVEY DATA - - - + - - MAP DATA

APPENDIX C
ELEVATION REFERENCE MARKS

ELEVATION REFERENCE MARKS

Reference Mark	Elev. (NGVD)	Description	Map Number
1	1411.52	Top of center post of guardrail, N side of Perkins St. bridge over Correction Creek. Along S edge of SW1/4 Sec 26 T31N R1E.	15
2	1424.75	Chisel mark on top of SE wing-wall of HWY 64 and Correction Creek bridge. Along N edge of SW1/4 Sec 26 T31N R1E.	9
3	1405.09	Chiseled "X" on top of NW wing-wall of Peterson Dr. bridge next to road bed. Along S edge of NW1/4 Sec 35 T31N R1E.	19
4	1400.72	Top of S corrugated metal pipe culvert inlet under State HWY 13. Along W edge of SW1/4 Sec 35 T31N R1E.	24
5	1433.57	Top of N end of E steel culvert under Allman St. Along S edge of SW1/4 Sec 23 T31N R1E.	4
6	1403.33	Nail in top center pier E side of Soo Line railroad trestle. NE1/4 Sec 2 T30N R1E.	24
7	1398.78	Chiseled "X" on top of NW wing-wall next to concrete guardrail of gravel road bridge over Correction Creek. NE1/4 Sec 2 T30N R1E.	24
8	1494.05	Top of SE corner of green transformer box on Crane Dr., by Grunwald driveway. Considered temporary because the transformer slab will probably frost heave. Use with caution. Along S edge of NE1/4 Sec 23 T31N R1E.	5 (Not Included)

Appendix D

**TABULATION OF WATER SURFACE ELEVATIONS,
DISCHARGES AND FLOODWAY DATA**

TABLE 1: ELEVATION-DISCHARGE DATA
CORRECTION CREEK FLOODPLAIN MANAGEMENT STUDY

FLOODING SOURCE		DISCHARGE-ELEVATION									
CROSS SECTION	DISTANCE*	10 YEAR		50 YEAR		100 YEAR		500 YEAR			
	FEET	Q cfs	Elev. Ft, NGVD	Q cfs	Elev. Ft, NGVD	Q cfs	Elev. Ft, NGVD	Q cfs	Elev. Ft, NGVD		
COUNTY HWY O	4220										
H	4290	805	1400.9	1270	1402.5	1524	1402.7	2038	1403.0		
I	5252	805	1400.9	1270	1402.5	1524	1402.7	2038	1403.0		
J	5870	805	1400.9	1270	1402.5	1524	1402.7	2038	1403.0		
STATE HWY 13	5950										
K	6015	805	1403.0	1270	1403.6	1524	1403.8	2038	1404.0		
L	7465	773	1403.0	1209	1403.7	1454	1403.9	1938	1404.2		
M	7945	773	1403.1	1209	1403.8	1454	1404.0	1938	1404.3		
PETERSON ROAD	8000										
N	8055	773	1403.6	1209	1404.8	1454	1405.1	1938	1405.5		
O	9100	773	1403.8	1209	1404.9	1454	1405.2	1938	1405.6		
P	9845	773	1404.2	1209	1405.3	1454	1405.6	1938	1406.1		
PRIVATE DRIVE	9900										
Q	9955	773	1404.9	1209	1405.8	1454	1406.2	1938	1406.8		
R	10883	920	1407.1	1317	1407.4	1555	1407.7	1971	1408.0		
S	12145	920	1408.3	1317	1408.5	1555	1408.6	1971	1409.0		
PERKINS ST	12200										
T	12252	920	1409.9	1317	1410.2	1555	1410.3	1971	1410.5		
U	13087	881	1411.5	1263	1411.8	1497	1412.0	1900	1412.3		
V	15110	881	1417.5	1263	1418.4	1497	1418.9	1900	1419.5		
STATE HWY 64	15220										
W	15290	881	1422.0	1263	1424.1	1497	1425.4	1900	1427.7		
X	16280	836	1423.2	1215	1424.9	1452	1426.0	1867	1428.0		
Y	18350	836	1429.8	1215	1430.6	1452	1431.2	1867	1432.2		
ALLMAN ST	18410										
Z	18461	836	1435.4	1215	1435.8	1452	1435.9	1867	1436.2		
AA	21431	836	1443.7	1215	1444.1	1452	1444.4	1867	1444.7		

* DISTANCES ARE MEASURED FROM THE CONFLUENCE OF CORRECTION CREEK WITH THE LITTLE BLACK RIVER

TABLE 2: FLOODWAY DATA
CORRECTION CREEK FLOODPLAIN MANAGEMENT STUDY

FLOODING SOURCE CORRECTION CREEK		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NGVD)		
CROSS SECTION	DISTANCE* (FEET)	WIDTH (FEET)	X-SECTION AREA (SQ FT)	MEAN VELOCITY (FT/SEC)	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
H	4290	732	5723	0.27	1402.7	1402.7	0
I	5252	640	3647	0.42	1402.7	1402.7	0
J	5870	580	3443	0.44	1402.7	1402.7	0
K	6015	705	4774	0.32	1403.8	1403.8	0
L	7465	513	1910	0.76	1403.9	1403.9	0
M	7945	486	1585	0.92	1404.0	1404.0	0
N	8055	525	1900	0.76	1405.1	1405.1	0
O	9100	515	2043	0.71	1405.2	1405.2	0
P	9845	162	634	2.29	1405.6	1405.6	0
Q	9955	171	695	2.09	1406.2	1406.2	0
R	10883	650	1443	1.08	1407.7	1407.7	0
S	12145	670	1442	1.08	1408.6	1408.6	0
T	12252	610	2564	0.61	1410.3	1410.3	0
U	13087	455	862	1.74	1412.0	1412.0	0
V	15110	50	246	6.09	1418.9	1418.9	0
W	15290	70	695	2.15	1425.4	1425.4	0
X	16280	251	994	1.46	1426.0	1426.0	0
Y	18350	153	406	3.58	1431.2	1431.2	0
Z	18461	458	2086	0.70	1435.9	1435.9	0
AA	21431	461	822	1.77	1444.4	1444.4	0

* DISTANCES ARE MEASURED FROM THE CONFLUENCE OF CORRECTION CREEK WITH THE LITTLE BLACK RIVER

APPENDIX E
INVESTIGATION AND ANALYSIS

Investigation and Analysis

The Correction Creek watershed was modeled using the standard methodology of the Soil Conservation Service. The hydrology was simulated using a computer program, Technical Release (TR) 20 (Computer Program for Project Formulation Hydrology). This program can process either rainfall, or direct runoff such as snowmelt. The watershed was divided into six drainage areas to obtain discharges at various points along the creek. The points were selected based on road crossings or additional drainage area (see drainage area map on page E-3). The results of the TR20 modelling were used, along with ground survey data, to model the flood depths using a step backwater computer program, WSP2 (Technical Release 61 - Water Surface Profiles).

A USGS empirical equation (William R. Krug, et. al., 1992) and an analysis of nearby stream gaging stations were used to generate 100-year frequency peak discharge values to compare with the 100-year peak discharge value generated by TR20. The discharge values obtained from the USGS empirical equation and the analysis of nearby gaging stations compared reasonably with the discharge value generated by TR20. The TR20 generated discharges and the corresponding water surface elevations for each cross section and storm frequency are listed in Appendix D. The flood profiles are in Appendix A.

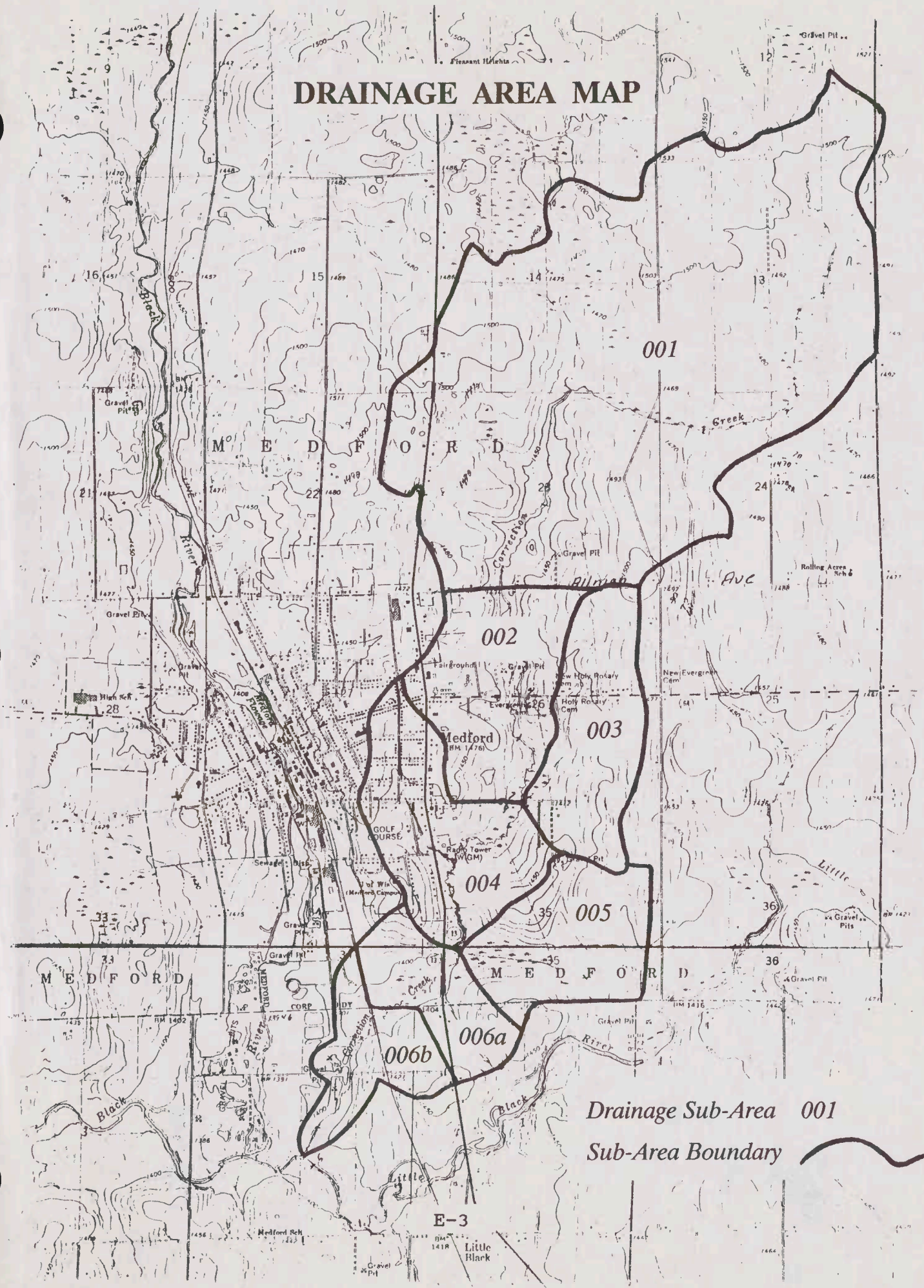
The elevation and width of flooding data generated by the WSP2 computer program were used to delineate the 100- and 500-year floodplain areas on the contour maps furnished by the City of Medford. Discrepancies exist (up to approximately 1.5 to 2.0 feet) between the ground surveyed cross sections and the contour map elevations. Cross sections have been included in Appendix B to show this difference. The ground survey data had been checked and found to be correct. Attempts were made with the City of Medford to resolve the apparent errors in the contour maps, but they were never resolved. Therefore, the survey cross section data were used, where available, and the contours on the map were used as a guide between the surveyed cross sections. It is suggested that any dispute with the actual flood limits be resolved using the profile elevations and field survey rather than the limits shown on the maps.

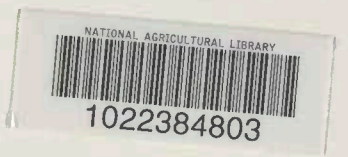
Note that this study analyzed clear water flooding only. The TR20 and WSP2 computer programs do not have the capability of simulating the presence of ice or debris in floodwater. Although debris or ice may increase the flooding potential by causing blockages at culverts or bridges, modelling this was outside the scope of this study.

The downstream study limit was changed from that stated in the original plan of work due to insufficient hydrologic and hydraulic data for the Black River from its confluence with the Little Black River upstream to the City of Medford's southern corporate limit. In the plan of work, the downstream study limit was located at the junction of Correction Creek and the Little Black River. However, the plan of work did not include an analysis of the Black River. This analysis would be necessary to evaluate the backwater effect from the Black River on Correction Creek in the area between the Gravel Road and County Hwy 0.

Information is available for any future study of Correction Creek downstream of the corporate limits of the City of Medford. Detailed mapping with a 1"=100' scale and 2' contour intervals is available for the area between the Gravel Road and County Hwy 0. See page 9 for the index to the maps. Surveyed cross sections of Correction Creek are also available from just upstream of its junction with the Little Black River to the Corporate Limits of the City of Medford.

DRAINAGE AREA MAP





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